

Having described the invention, the following is claimed:

1. A turnbuckle assembly comprising:

a first one-piece sleeve having first and second axial ends, said first axial end of said first sleeve having an internally threaded portion which threadably engages a first threaded part, said first axial end of said first sleeve including an integrally formed clamp which clamps said first axial end to the first threaded part;

a second one-piece sleeve having first and second axial ends, said first axial end of said second sleeve having an internally threaded portion which threadably engages a second threaded part, said first axial end of said second sleeve including an integrally formed clamp which clamps said first axial end to the second threaded part; and

a connector member interconnecting said first and second sleeves, said connector member having a first axial end non-rotatably connected to said second axial end of said first sleeve, said connector member having a second axial end non-rotatably connected to said second axial end of said second sleeve.

2. A turnbuckle assembly as set forth in claim 1 wherein said first axial end of said first sleeve includes first and second clamping portions movable toward each other to clamp said first sleeve to the first threaded part, said first axial end of said second sleeve including first and second clamping portions movable toward each other to clamp said second sleeve to the second threaded part.

3. A turnbuckle assembly as set forth in claim 2 wherein each of said first and second clamping portions of said first sleeve includes a radially extending portion having a plurality of openings through which bolts extend to move the first and second clamping portions of said first sleeve toward each other, each of said first and second clamping portions of said second sleeve including a radially extending portion having a plurality of openings through which bolts extend to move said first and second clamping portions of said second sleeve toward each other.

4. A turnbuckle assembly as set forth in claim 2 wherein said first clamping portion of said first sleeve includes a portion extending toward said second clamping portion of said first sleeve, said first clamping portion of said second sleeve including a portion extending toward said second clamping portion of said second sleeve.

5. A turnbuckle assembly as set forth in claim 4 wherein said portion of said first clamping portion of said first sleeve has a surface extending parallel to said axis of said first sleeve, said portion of said first clamping portion of said second sleeve having a surface extending parallel to said axis of said second sleeve.

6. A turnbuckle assembly as set forth in claim 2 wherein said first sleeve has a longitudinally extending seam, said first and second clamping portions of said first sleeve extending on opposite sides of said seam in said first sleeve, said second sleeve having a longitudinally extending seam, said first and second clamping portions of said second sleeve

extending on opposite sides of said seam in said second sleeve.

7. A turnbuckle assembly as set forth in claim 1 wherein said second end of said first sleeve has an outer surface extending parallel to said axis of said first sleeve, said connecting member having a first inner surface engageable with said outer surface of said second end of said first sleeve to prevent relative rotation between said connecting member and said first sleeve, said second end of said second sleeve having an outer surface extending parallel to said axis of said second sleeve, said connecting member having a second inner surface engageable with said outer surface of said second end of said second sleeve to prevent relative rotation between said connecting member and said second sleeve.

8. A turnbuckle assembly as set forth in claim 7 wherein said second end of said first sleeve has a second outer surface extending parallel to said axis and said first outer surface of said first sleeve, said connecting member having a third inner surface engageable with said second outer surface of said

second end of said first sleeve to prevent relative rotation between said connecting member and said first sleeve, said second end of said second sleeve having a second outer surface extending parallel to said first outer surface and said axis of said second sleeve, said connecting member having a fourth inner surface engageable with said second outer surface of said second end of said second sleeve to prevent relative rotation between said connecting member and said second sleeve.

9. A turnbuckle assembly as set forth in claim 1 wherein said first end of said first sleeve has a first outer diameter, said second end of said first sleeve having a second outer diameter smaller than the first outer diameter, said first end of said second sleeve having a first outer diameter, said second end of said second sleeve having a second outer diameter smaller than the first outer diameter of said second sleeve.

10. A turnbuckle assembly as set forth in claim 1 wherein said connecting member is crimped to said second end of said first sleeve, said connecting member being crimped to said second end of said second sleeve.

11. An adjustable tie rod for an automotive vehicle, said tie rod comprising:

a first tie rod member including a first end portion having left-hand, external threads and a second end portion having a socket attachment means;

a second tie rod member including a first end portion having right-hand, external threads and a second end portion having a socket attachment means;

a first sleeve having first and second axial ends, said first axial end of said first sleeve having an internally threaded portion which threadably engages said first end portion of said first tie rod member, said first axial end of said first sleeve including an integrally formed clamp which clamps said first axial end to said first end portion of said first tie rod member;

a second sleeve having first and second axial ends, said first axial end of said second sleeve having an internally threaded portion which threadably engages said first end portion of said second tie rod member, said first axial end of said second sleeve including an integrally formed clamp which clamps said first axial end to said first end portion of said second tie rod member; and

a connector member interconnecting said first and second sleeves, said connector member having a first axial end non-rotatably connected to said second axial end of said first sleeve, said connector member having a second axial end non-rotatably connected to said second axial end of said second sleeve.

12. An adjustable tie rod as set forth in claim 11 wherein said first axial end of said first sleeve includes first and second clamping portions movable toward each other to clamp said first sleeve to said first end portion of said first tie rod member, said first axial end of said second sleeve including first and second clamping portions movable toward each other to clamp said second sleeve to said first end portion of said second tie rod member.

13. An adjustable tie rod as set forth in claim 12 wherein each of said first and second clamping portions of said first sleeve includes a radially extending portion having a plurality of openings through which bolts extend to move the first and second clamping portions of said first sleeve toward each other, each of said first and second clamping portions

of said second sleeve including a radially extending portion having a plurality of openings through which bolts extend to move the first and second clamping portions of said second sleeve toward each other.

14. An adjustable tie rod as set forth in claim 12 wherein said first clamping portion of said first sleeve includes a portion extending toward said second clamping portion of said first sleeve, said first clamping portion of said second sleeve including a portion extending toward said second clamping portion of said second sleeve.

15. A turnbuckle assembly as set forth in claim 14 wherein said portion of said first clamping portion of said first sleeve has a surface extending parallel to said axis of said first sleeve, said portion of said first clamping portion of said second sleeve having a surface extending parallel to said axis of said second sleeve.



16. An adjustable tie rod as set forth in claim 12 wherein said first sleeve has a longitudinally extending seam, said first and second clamping portions of said first sleeve extending on opposite sides of said seam in said first sleeve, said second sleeve having a longitudinally extending seam, said first and second clamping portions of said second sleeve extending on opposite sides of said seam in said second sleeve.

17. An adjustable tie rod as set forth in claim 11 wherein said second end of said first sleeve has an outer surface extending parallel to said axis of said first sleeve, said connecting member having a first inner surface engageable with said outer surface of said second end of said first sleeve to prevent relative rotation between said connecting member and said first sleeve, said second end of said second sleeve having an outer surface extending parallel to said axis of said second sleeve, said connecting member having a second inner surface engageable with said outer surface of said second end of said second sleeve to prevent relative rotation between said connecting member and said second sleeve.

18. A turnbuckle assembly as set forth in claim 17 wherein said second end of said first sleeve has a second outer surface extending parallel to said axis and said first outer surface of said first sleeve, said connecting member having a third inner surface engageable with said second outer surface of said second end of said first sleeve to prevent relative rotation between said connecting member and said first sleeve, said second end of said second sleeve having a second outer surface extending parallel to said first outer surface and said axis of said second sleeve, said connecting member having a fourth inner surface engageable with said second outer surface of said second end of said second sleeve to prevent relative rotation between said connecting member and said second sleeve.

19. An adjustable tie rod as set forth in claim 11 wherein said first end of said first sleeve has a first outer diameter, said second end of said first sleeve having a second outer diameter smaller than the first outer diameter of said first sleeve, said first end of said second sleeve having a first outer diameter, said second end of said second sleeve

having a second outer diameter smaller than the first outer diameter of said second sleeve.

20. An adjustable tie rod as set forth in claim 11 wherein said connecting member is crimped to said second ends of said first and second sleeves.